Open Access

J. Sustain. Econ. Dev., 2025, 3(1): 83–92
ISSN (Online): 3005 -2513; ISSN (Print):3005-2505
DOI: https://doi.org/10.22194/JSD/25.40
https://societyfia.org/journal/JSD

Society for Innovative Agriculture

Belt and Road Initiative: Catalyst of Household Livelihood Improvement Through Women Empowerment

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This study investigates the impact of Special Economic Zones (SEZs) on household livelihood improvements through women empowerment in Pakistan. The analysis examines different factors affecting household socioeconomic conditions in and around five SEZs which include Moqpondass, Rashakai, Allama Iqbal Industrial City, Dhabeji, and Bostan. The research examines how various key elements affect the modification of household income as well as employment stability and resource access and community well-being by studying employment options and infrastructure progress together with skill development programs and government rules through women empowerment. The research demonstrates that SEZ activities achieved substantial livelihood enhancements but let down certain areas regarding resource and service accessibility for the population. The local population views SEZ-driven improvements as moderate but this perception changes depending on the availability of infrastructure and skill development programs within the area. The successful outcomes of SEZs face ongoing obstacles in delivering their advantages uniformly to every household especially those excluded groups. The study reveals the necessity of developing precise programs to reduce documented resource distribution gaps. The policy recommendations focus on infrastructure development combined with skill training expansion as well as strengthening social support measures to guarantee SEZs generate sustainable economic growth across all involved household categories.
Keywords: Household, livelihood, improvement, Pakistan, economic policy, CPEC .

INTRODUCTION

Enhancing living standards of small holder households towards the goal of socio-economic development is paramount, particularly in the development corridors seeking to close the divide in economic disparity (Fuseini & Kemp, 2015). In developing countries, measures implemented in the improvement of the economy, for instance, the Special Economic Zones (SEZ) have been used in the improvement of the standards of living (Khan et al., 2024). SEZs offer the opportunity for industrialization on a single area as well as offering local employment, infrastructure, and technology implying higher standards of living of the nearby communities (Kalu & Aniche, 2025). In Pakistan, the environmental placement of SEZs across various areas, among them Moqpondass (Gilgit Baltistan), Rashakai (Noshera), Allama Iqbal Industrial City (Faisalabad), Dhabeji (Thatha), Bostan (Pishin), demonstrates that the government is focused on regional growth. These zones have been planned for creation of business environment, drawing foreign investment and ensuring harmonious social and economic development. However, their effects on local households remain an area of study especially in relation to their capacity to promote employment generation, income security, training and availing of resources. Household livelihoods operating inside and close to SEZs are the focal point of this study, thus illuminating a complex phenomenon (Goodburn, 2025). On the positive side, SEZs bring employment, improved physical infrastructure and financial services. On the other hand, they rely on such factors as the sharing of the benefits fairly, involving the community, and policies. Thus, in addition to assessing SEZ's effectiveness in impacting household welfare positively, or otherwise, this research also considers the determinants that shape its effectiveness. This research also examines the sustainability of SEZs mainly in relation to the effectiveness of SEZs in balancing risks and opportunities to create communities that have the capability to embrace and cope with change.

Murtaza, N., Bashir, M.K. Ali A. & Ghafoor, A. (2025). Belt and Road Initiative: Catalyst of Household Livelihood Improvement through Women Empowerment. *Journal of Sustainable and Economic Development, 3*(1), 83–92. *https://doi.org/10.22194/JSD/25.40*
[Received 10 Dec 2024; Accepted 15 Apr 2025; Published 19 Jul 2025]
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***Role infrastructure development and household livelihood improvement*:** The provision of CPEC has helped in addressing the subject of employment; openings that consequently impacts the rates of households and steadiness (Ullah et al., 2024). Research shows that CPEC infrastructure has created many employment opportunities eradicating poverty by enhancing the standards of living in Pakistan. For instance, (Mahmood et al., 2022) established that the projects implemented under CPEC have not only favored the employment rates upsurge among the regions encompassed. However, some discreteness is still observed regarding the equitable distribution of such opportunities, especially concerning disadvantaged demographics. The CPEC infrastructure projects primarily focus on transportation infrastructure such as railway, road, energy, and others during the economic cooperation for regional participation (Mahmood et al., 2020). Appropriate transportation networks relieve the burdens of high transaction costs, develops new markets for home-based industries, enhancing per capita earnings. (Khalil et al., 2021) have shown in his study that improved infrastructure due to CPEC have resulted into increased economic activities as well as household income. However, some areas will not be as lucky and will not get the same social or economic advantages that they hope for.

Economic corridors and infrastructure projects details under BRI

***The China–Mongolia Russia economic corridor (CMREC)*:** The China–Mongolia–Russia Economic Corridor (CMREC) is a key axis of the Belt and Road Initiative (BRI) that promotes increased cooperation to further interconnect the

Table 1. Overview of CMREC projects according to their role and current status.

Name	Segment	Countries	Role	Current Status	Project Details	Starting Date
Central Rail	Ulan-Ude–Erenhot Ulaanbaatar–Erenhot– Beijing–Tianjin	RussiaChina Mongolia	Rail modernization Rail modernization	Functional		30-Sep-2018
Northern Rail	Kuragino-Kyzyl Kyzyl–Arts Suur–Ovoot Ovoot–Erdenet Erdenet–Salkhit	Russia Mongolia Russia Mongolia Mongolia	New rail project New rail project New rail project Rail reconstruction	Scheduling	Work to complete the portion of the Ovoot coal mine began in 2019. The final feasibility study was authorized in April 2018.	10-Apr-2018
Western Rail	Urumqi Arts Suur–	Mongolia and China	New rail project	Offered	The proposed project under Mongolia national rail policy and joint China–Mongolia–Russia declaration.	25-Nov-2018
Eastern Rail	Choibalsan–Bichigt Bichigt–Chifeng Chifeng–Jinzhou	China Mongolia China	New rail project New rail project Rail reconstruction	Suggested	Mongolia, China, as well as Russia are prepared to put the deal into effect.	23-Jan-2018
Nizhneleninskoy-e Bridge	Leninskoye–Tongjiang	China and Russia	Rail project	Construction in process	The China's side of the railway bridge has been completed already.	13-Nov-2018
Corridor (Primorye-1)	Poltavka crossing Harbin–Ussuriysk Ussuriysk–China Nakhodka Border Pogranichny Vladivostok–Vostochny Port	China, Russia China, Russia China, Russia Russia Russia Russia	Border cost reduction Border cost reduction Road reconstruction Rail upgrade New seaport	Operational		26-Sep-2018
Seaside 2 Corridor (Primorye-2) Zarubino Port	Choibalsan–Arixan Kraskino-Hunchun crossing China border–Zarubino China border–Zarubino Russia	Mongolia China, Russia Russia Russia New seaport	Rail project Border cost reduction New rail New divided road	Operational	A new transit route inside the Primorye-2, from Hunchun to Zarubino to Ningbo, inaugurated in September, as well as the first test overload happened in April of 2018.Hunchun, a border city in Jilin Province, and the port of Zarubino are linked together by the corridor.	13-Nov-2018
Highway 3	Erehnot–Jining	Mongolia, Russia, and China	Road project Road upgrade	Functional	Since its operational test in August 2016, the connection has been in use.	30-Sep-2018
Highway-4	Urumqi	Russia, Mongolia, and China	Road project	Functional	A section of the Asian Highway 4, which connects Karachi and Novosibirsk.	30-Sep-2018

three neighboring states. This corridor serves as a crucial one for building trade, infrastructural connections and a coherent regional space. From my research perspective, CMREC provides insights into how the strategic Economic Corridors under BRI can help redress regional imbalances and propel correct development. Moreover, it will allow seeing how similar corridors can contribute to the improvement of the quality of life of local communities and create conditions for their economic development; and in this case, CMREC is an example of developing such a corridor specifically for underdeveloped areas. The project details of China Mongolia Russia Economic Corridor are shown in Table 1.

***The new Eurasian land bridge*:** The New Eurasian Land Bridge is one of the crucial projects included in the Belt and Road Initiative with the connection of China to Europe through the states of Central Asia. It plays the role of the fast and effaced link of trade and transport that minimized time period of transportation and maximize the economic integration at the continental level. As far as my investigation is concerned, this corridor proves that the infrastructure construction within the BRI framework can promote regional development and generate socio-economic effects. As its task is to link up various markets, the analysis of such initiatives can build upon the potential of such undertakings in enhancing livelihoods, supporting community development and achievement of the UN Sustainable Development Goals across the regions that the organization covers. The project details of New Eurasian Land Bridge are shown in Table 2.

***The China central Asia West Asia economic corridor*:** The China–Central Asia–West Asia Economic Corridor is one of

Table 2. Overview of NELB projects according to their role and current status.

Name of the Project	Segment	Countries	Role	Current Situation	Details of Project	Starting Date
Southern Coal	Khuut–Tavan Tolgoi–Gushun Suhait–Baotou Gushun Suhait	Mongolia	China New rail	Under construction rail	In Mongolia, civil construction is now under way, with completion anticipated in 2019.	12-Feb-2018
Khorgos–Aktau Railway	Khorgos–Zhetygen Jezkazgan–Saksaulsky Beyneu–Shalkar Khorgos Dry Port Aktau Port	Kazakhstan Kazakhstan Kazakhstan China, Kazakhstan Kazakhstan	New hicap rail New rail New rail Border cost reduction New seaport	Under construction	The train connects Aktau port (Kazakhstan) with Khorgos (China), which is set to become the largest dry port in the world.	15-Apr-2017
Moscow–Kazan HSR	Moscow Kazan	Russia	hicap rail	Suggested	The Eurasian Development Bank signed a partnership agreement with Russian Railways in May 2018 as part of its commitment to finance.	30-May-18
Urumqi–Khorgos Rail	Urumqi–Khorgos	China	New hicap rail	Functional	A new railway segment opened for traffic between Khorgos to Urumqi.	30-May-2018
Urumqi–Khorgos Road	Urumqi–Khorgos	China	New road	Functional	A portion of the construction is still under progress. However, the road has opened and is currently usable in China and extends to the remainder of the interior via Kazakhstan.	30-May-2018
Khorgos–Almaty Road	Khorgos Almaty	Kazakhstan	New road	Functional		30-May-2018
Highway P4 A17	Astana Pavlodar	Kazakhstan	Upgrade	Functional		07-Sep-2018
Highway M36	Astana Karaganda	Kazakhstan	Upgrade	Functional	Although the road is now in use, Kazakhstan is actively planning more modifications and extensions.	07-Sep-2018
Highway A2	Almaty–Shymkent Shymkent–Tashkent	Kazakhstan, Uzbekistan	Upgrade	Functional	The newly renovated route begins in Almaty and ends beyond Uzynagash. To Shymkent, it continues as a two-lane roadway.	11-Oct-2018
Highway M32	Shymkent Tashkent	Kazakhstan, Uzbekistan	Upgrade	Functional		11-Oct-2018

Table 3. Overview of CCAWAEC projects according to their role and current status.

Project Name	Segment (Improved)	Involved Countries	Type of Improvement	Current Status	Project Details	Starting Date
Tehran Mashad Rail	Tehran Mashhad	Iran Islamic Rep	Upgrade	Construction (Continue)	Construction on the electrification project began in 2017	04-May-2018
Tehran Isfahan High-Speed Rail	Tehran Qom–Isfahan	Iran Islamic Rep	New hicap rail	Construction (In process)	Completed.	15-Nov-2018
Kashgar–Tashkent Rail	Kashgar Andijan	Republic, Uzbekistan China, Kyrgyz	New rail	Suggested		19-Feb-2018
Sher Khan Herat Rail	Pap–Tashkent Kunduz–Herat	Uzbekistan	hicap rail New rail	Construction (Inprocess)	The Termiz extension has been in use since 2012. March 2019 was the anticipated completion date.	07-Nov-2018
Samarkand Mashhad Rail	Samarkand– Ashgabat–Mashhad	Uzbekistan Turkmenistan,	Rail upgrade	Functional		01-Jun-2018
Kashgar Dushanbe Rail	Kashgar	China, Kyrgyz Republic, Tajikistan	New rail	Suggested		01-Sept-2017
North–South Alternate Road	Jalalabad– Töö Ashuu	Kyrgyz Republic	Construction of Road	Construction (In process)		01-May-2018
Dushanbe–Afghan Rail	Kolkhozabad	Dushanbe	Rail upgrade	Suggested		23-Aug-2018
Baku Port Turkmenbashi–Baku	Aktau–Baku	Kazakhstan Turkmenistan	New sea link	Functional	Ports operational.	05-July-2018
Baku–Tbilisi Rail	Baku Ganja Tbilisi	Georgia	Rail upgrade	Functional	Several extensions occurred despite the fact that preparation started in 2007.	30-Oct-2018
Tbilisi–Kars Rail	Tbilisi—Kars	Georgia Turkey	New rail	Functional	Launched	28-May-2018
Anaklia Port Anaklia Anaklia–Istanbul	Anaklia port Georgia Georgia¸ Turkey	Georgia New sea link	New port	Functional		28-July-2018
Ambarli Port	Istanbul	Turkey	New ports and sea links	Functional		21-Apr-2018
Piraeus Port	Athens	Greece	Major port expansion	Functional		27-Feb-2018

the major pillars of the BRI which is designed to enhance the economic cooperation between China and Central and West Asian states. This corridor enhances the transport of goods and services as well as energy resources and supports regional integration. In my research capacity, this corridor epitomises how strategic infrastructure interventions can promote economic participation and social improvement. Due to its focus on connecting different economies, it offers an understanding of how such activities can support the development of livelihood, alter vulnerable groups' status, and enhance the condition of women in specific areas that it affects. The project details of China Central Asia West Asia Economic Corridor are shown in Table 3.

***The China-Pakistan Economic Corridor (CPEC)*:** The China–Pakistan Economic Corridor (CPEC) of the Belt and Road Initiative (BRI) is the most ambitious and transformative project intended to deepen economic relations of China with Pakistan. It covers a broad spectrum of extra projects that covers roads, energy, plants and industrial area with a view of enhancing trade and economic productivity of a region. In view of my study, CPEC could be a good chance to study the prospects for the large-scale mega projects to intervene in the socio-economic issues relating to livelihood enhancement and women's advancement. Using CPEC case study framework this research seeks to establish how CPEC could be used to promote sustainability and inclusive growth in Pakistan. The project details of China Pakistan Economic Corridor are shown in Table 4.

***The Bangladesh–China–India-Myanmar economic Corridor–India Myanmar*:** The Bangladesh-China-India-Myanmar Economic Corridor (BCIM-EC) is one of the significant components of BRI, which aims at boosting connectivity and cooperation in trade, culture, and investments linking the member countries. This corridor aims at increasing integration through construction of transport infrastructure, energy links, and trade connections. As far as my research is concerned, BCIM-EC brings out the concept of how MCEC can promote SD and livelihood upliftment in the broad research area that lacks such knowledge. This corridor promotes beneficial regional integration and holds prospects to economically empower ignored groups, especially women and small businesses with small-scale

Table 4. Overview of CPEC projects according to their role and current status.

Name of the Project	Segment	Countries	Improvement type	Current details	Details of Project	Starting Date
Yarkant Road	Tashkurgan Yarkant (Shache)	China	New road	Suggested		25-Jun-2017
Raikot–Shinkiari Shinkiari–Burhan Karakoram Highway	Kashgar–Khunjerab Pakistan Pakistan	China	Road construction New road Road upgrade	Complete construction	The China-Pakistan Highway is still being rebuilt; it was finished in 2019. Historic trading route is followed by the highway.	19-Oct-2018
China Pakistan Rail	Kashgar Khunjerab Taxila	China and Pakistan	Rail	Suggested	A feasibility study is scheduled.	07-Nov-2018
Havelian–Hyderabad Capacity Expansion (ML-1)	Havelian Larkana Hyderabad	Pakistan	upgrade	Construction in process		21-Mar-2018
Karachi Peshawar Capacity Expansion	Karachi–Hyderabad Lahore Peshawar	Pakistan	Upgraded rail	Arranging	This railway serves as the nation's main transportation hub and connects all of Pakistan's major towns.	02-Oct-2018
Gwadar Rail	Kotla Jam–Quetta–Gwadar	Pakistan	New rail	Arranging	The feasibility study was recently finished.	02-April-2018
Alternative Gwadar Rail Passage	Gwadar Karachi	Pakistan	New rail road	Suggested	Though still being discussed, there were no formal plans as of late 2018.	30-Oct-2018
Besima-Jacobabad Rail	Besima Jacobabad	Pakistan	New rail road	Arranging	At the point of final approval.	27-Mar-2018
M3/M4 Multan Highway	M2/M3 Bridge–Faisalabad Multan	Pakistan	New road	Functional	It was launched in May 2018 and is presently in use.	27-May-2018
Lahore Abdul Road Upgrade	Lahore–Road	Pakistan	Rail upgraded	Functional	All improvements were finished by October 2018, at which point the roadway was prepared for traffic to begin.	09-Nov-2018
Multan Sukkur Road	Multan Sukkur	Pakistan	Road upgraded	Construction In process	In 2018, the two-way, six-lane road's initial segment was opened for traffic. The remainder was finished in 2019.	17-Sep-2018
Gwadar Surab Road	Gwadar–Panjgur– Surab	Pakistan	New road	Functional		11-Sep-2017
Surab DI Khan Road	Surab Quetta–DI Khan	Pakistan	reconstruction	Functional	Currently in use and launched in 2017.	26-Nov-2017
M8 Sukkur Besima Road	Sukkur–Shahdadkot Besima	Pakistan	New road	Functional	Early in 2018, construction was finished.	09-Apr-2018
Shahdadkot Road	Shahdadkot DI Khan	Pakistan	New road	Scheduled		20-Nov-2018

operation in less developed areas. The project details of Bangladesh–China–India-Myanmar Economic Corridor–India Myanmar are shown in Table 5.

***The China–Indochina Peninsula economic corridor*:** The China–Indochina Peninsula Economic Corridor (CICPEC) is an important component of the BRI and seeks to enhance infrastructure and trade link between China and south east Asian countries. It helps foster regional integration since it improves availability of infrastructure to foster the required connection to support trade and any other aspect that may spur development within the region. From my research perspective, CICPEC shows the positive transformative role of economic corridors in terms of stimulating the developmental changes for sustainable livelihoods. This case demonstrates that studying this corridor as a model of community development and inclusion of women and minorities on sustainable socio-economic improvement can give more understanding of how these kinds of corridors can

Table 5. Overview of BCIM-EC projects according to their role and current status.

Project Name	Segment (Improved)	Involved Countries	Type of Improvement	Current Status	Project Details	Starting Date
Kunming–Calcutta High Speed Rail	Kunming–Mandalay–Calcutta	Bangladesh, China, India, Myanmar	New hicap rail	Suggested		13-Sep-2018
Dali–Lashio Railway	Dali–Ruili–Lashio	China, Myanmar	New rail	In process construction	This project started in 2011 and was completed in 2021.	26-Sep-2018
Kalay Jiribam Rail	Kalay–Tamu Jiribam	Myanmar, India	New rail	In process construction		18-May-2015
Dhaka Bongaon Rail	Dhaka Bongaon	Bangladesh, India		New rail	Suggested	05-Sep-2018
Kyaukpyu Port	Kyaukpyu–Mandalay Kyaukpyu	Myanmar Myanmar	Road upgrade New seaport New rail	Decided	The project was agreed to be scaled down from 10 to 2 berths	08-Nov-2018

Table 6. Overview of CICPEC projects according to their role and current status.

Name of the Project	Segment	Countries	Improvement details	Current details	Details of the project	Starting details
Kunming–Vientiane Rail	Kunming Vientiane	China Lao PDR	New rail	In process construction	By 2021, over 25% of the project's construction will be finished. The operating Kunming-Hekou rail on the Chinese side has a larger track, which increases cargo capacity.	21-July-2018
Bangkok Vientiane Rail	Bangkok Vientiane	Thailand and Lao PDR	New rail	In process construction	Under development, the project is anticipated to be completed by 2021 along with connect China to Vietnam, the Lao PDR, and Myanmar.	11-Feb-2018
East Coast Rail	Kuala Lumpur and Kota Bharu	Malaysia	New hi-cap rail	Cancelled	On 10 April 2019, Malaysia stated work might restart, having secured a 1/3 decrease in cost.	13-Sep-2018 4-Nov-2018 12 April2019
Gemas Johor Rail Upgrade	Gemas Johor Bahru	Malaysia	Rail upgrade		According to the Malaysian Transport Minister, the improvement is 20% complete and should be finished in 2022.	30-July-2018
Bangkok Kuala Lumpur High	Bangkok Pedang Besar Kuala Lumpur	Malaysia and Thailand	Rail upgrade	Speed Rail		07-Nov-2018
Kuala Lumpur–Singapore High Speed Rail	Kuala Lumpur–Seremban–Singapore	Malaysia and Singapore	New hicap rai	Delay	On September 5, 2018, it was officially terminated at Malaysia's request. According to Singaporean authorities, work on the project was completed by May 31, 2020.	07-Sep-2018
Vietnam National High Speed Rail	Hanoi Ho Chi Minh City	VIetnam	Rail upgrade	Suggested	The planning process started in 2007 and was put on hold until 2010.	08-April-2018
Vietnam Cambodia Rail	Phnom Penh–Ho and Minh City	Cambodia and Vietnam	New rail Chi	Suggested	Although work on the Bangkok-Phnom Penh rail 28-Jun-18 junction has started, it is still under discussion.	15-Feb-2018
Burma Railway	Nam Tok Thanbyuzayat	Thailand and Myanmar	New rail	Scheduled		22-January-2018
Sihanouk ville Port	Phnom Penh Phnom Penh Sihanoukville	Cambodia Cambodia	New rail New divided road New seaport	Inprocess construction	The only deepwater port in Cambodia. A projected special economic region will accompany it.	12-Sep-2018
Thai Canal	Satun–Songkhla	Thailand	New sea links	Suggested	Offers a substitute for the chokepoint located in the Strait of Malacca.	06-Apr-2018

be implemented to promote and assist the voluntary socio-economic improvement of people and area. The project details of China–Indochina Peninsula Economic Corridor are shown in Table 6.

MATERIALS AND METHODS

This study examines how various economic factors influence women's empowerment opportunities in Pakistan. These factors include access to access to skill development programs, social support services, health and environmental factors, infrastructure development, and perceptions of government policies in Special Economic Zones (SEZs). To evaluate the potential of household livelihood improvement, five economic zones were included in the study namely Moqpondass Special Economic Zone, Gilgit Baltistan (GB), Rashakai Special Economic, Zone, Noshera., Allama Iqbal Industrial City, Faisalabad, Dhabeji Special Economic Zone, Thatha, Bostan Special Economic Zone, Pishin.

***Questionnaire design, pretesting, and sampling technique*:** For participant selection, purposive sampling was employed. In this method, the first participant was chosen based on the researcher's judgment of their relevance and qualifications. This approach was chosen because respondents were identified through the researcher's personal network (Etikan et al., 2015). In total 500 respondents were contacted and asked to complete the survey.

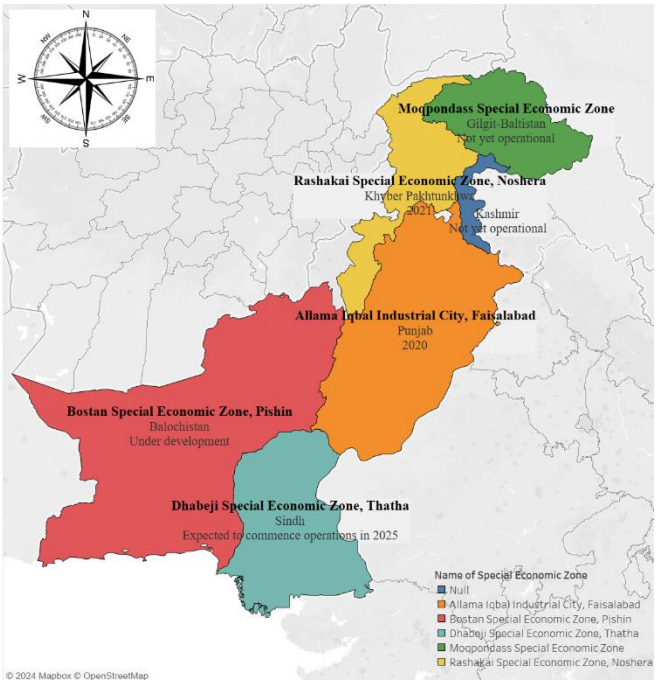

Figure 1. Geographical map of the special economic zones of CPEC.

***Data collection and study area*:** A quantitative research approach was adopted to ensure objectivity and reduce biases such as social desirability and researcher bias. Purposive sampling was used to select participants based on the researcher's judgment of relevance and qualifications, with Workers and Households within and near SEZs of CPEC identified through the researcher's personal network from six regions, including several Special Economic Zones (SEZs) (Ullah et al., 2024). The survey used a five-point Likert scale to assess variables such as skill development programs, social support services, health and environmental factors, infrastructure development, and perceptions of government policies of SEZ policies. After review, 500 valid responses were analyzed using statistical software. Anonymity was ensured to encourage honest feedback. The geographical map of the special economic zones of CPEC is shown in Figure 1.

RESULTS AND DISCUSSION

***Descriptive analysis*:** The Table 7 provides demographic details of the survey participants, categorizing them by age, occupation, family system, and residential status. Regarding age, the distribution is relatively even, with 21% of participants being under 18, 20.2% between 18-25 years, 20% aged 26-35, 19.8% in the 36-50 range, and 18.8% aged 50 and above. In terms of occupation, 20% are businesswomen, 18.8% are government employees, 22% work in the private sector, 20% are students, and 19% are unemployed. As for family system, 33% of participants live in joint families, 32.4% in single-family systems, and 34.6% in extended families. Lastly, residential status shows that 34.8% reside in urban areas, 32% in peri-urban areas, and 33.2% in rural areas. The data reveals a fairly balanced distribution across these demographic variables, with slight differences observed in the family system and residential status categories (Mahmood et al., 2022).

Table 7. Respondent's profile.

Demographics	Frequency	Percentage (%)
Age (years)		
Under 18	105	21.0
18-25	101	20.2
26-35	100	20.0
36-50	99	19.8
50 above	94	18.8
Occupation		
Businesswoman	100	20.0
Government Employee	94	18.8
Private employee	110	22.0
Student	100	20.0
Unemployed	95	19.0
Family System		
Joint	165	33.0
Single	162	32.4
Extended	173	34.6
Residential Status		
Urban	174	34.8
Peri Urban	160	32.0
Rural	166	33.2

N=500

Table 8. Descriptive Statistics of variables.

Variables		Mean	Standard Deviation	Excess Kurtosis	Skewness
Access to skill development Programs	Access1	4.022	1.048	1.022	-1.216
	Access2	3.864	1.038	0.749	-1.038
	Access3	3.968	1.017	0.997	-1.159
	Access4	3.900	1.013	0.862	-1.049
	Access5	3.972	0.963	1.827	-1.359
Social Support Services	SS1	3.824	1.026	-0.669	-0.522
	SS2	3.688	1.050	-0.054	-0.701
	SS3	3.598	1.039	-0.086	-0.638
	SS4	3.798	1.089	-0.400	-0.674
	SS5	3.656	1.109	-0.335	-0.614
Health and Environmental Factors	HF1	3.788	1.013	0.147	-0.745
	HF2	3.982	1.150	0.327	-1.082
	HF3	3.764	0.961	0.238	-0.691
	HF4	4.062	0.997	1.116	-1.169
	HF5	3.978	0.966	1.214	-1.117
Infrastructure Development	ID1	3.916	1.051	0.588	-1.034
	ID2	3.902	1.075	0.816	-1.101
	ID3	3.820	1.012	0.289	-0.830
	ID4	4.066	0.997	1.382	-1.263
	ID5	4.058	1.147	0.771	-1.264
Perception of SEZ Government Policies	GP1	3.780	1.052	-0.358	-0.635
	GP2	3.912	1.055	0.515	-1.004
	GP3	3.944	1.053	1.107	-1.218
	GP4	3.850	1.157	0.300	-1.025
	GP5	3.924	1.078	1.121	-1.222
Household Livelihood Improvement	HLI1	3.900	1.060	-0.100	-0.811
	HLI2	3.870	1.000	0.59	-0.985
	HLI3	3.600	1.190	-0.233	-0.785
	HLI4	3.700	1.200	0.165	-1.000
	HLI5	3.920	0.970	0.650	-0.960
Community Empowerment Perception	CEP1	3.972	1.067	0.567	-1.122
	CEP2	3.874	1.123	-0.383	-0.743
	CEP3	3.794	1.110	-0.384	-0.687
	CEP4	3.844	1.037	0.112	-0.860
	CEP5	3.832	1.081	-0.201	-0.768

A complete summary of SEZs household livelihood improvement variables appear in the descriptive statistics of Table 8. The chosen data points show mean statistics and standard deviation measurements together with excess kurtosis and skewness measurements to understand SEZ economic systems better. According to "Access to Skill Development" measurements which average 3.864 respondents indicate positive attitudes toward skill development programs. The negative skewness value of -1.216 suggests that most respondents view skill development access positively yet numerous other respondents maintain lower levels of optimism about this access.

The positive mean scores of "Social Support Services" and "Health and Environmental Factors" demonstrate that households within SEZs mostly experience satisfactory social service and health initiative support. The skewness measures from -0.522 for Social Support Services demonstrate enhanced support perceptions but limited negative views about these services. People view SEZ infrastructure improvements positively in terms of connectivity and utilities but show significant response variation based on ID1 to ID4 variables' standard deviations. The SEZs exhibit uneven infrastructure growth since some parts receive superior development benefits than others. According to the "Perception of SEZ Government Policies" indicators the surveyed population displays an intermediate attitude toward government policies which is supported by the mean rating between 3.7 to 3.8. The household evaluation of government

economic development promotion receives approval but additional improvements are necessary based on the response dispersion indicated by skewness and kurtosis measurements. The "Household Livelihood Improvement" variable reveals moderate public perception about income changes together with job stability and resource access improvements even though the -0.985 skewness value demonstrates positive views from most respondents.

***Conclusion*:** The research findings show ongoing improvements in SEZs alongside specific areas where continued development is needed. Most households express either favorable or satisfactory results regarding their livelihood improvements because they benefit from skill programs and community services and governmental initiatives. The various responses regarding these factors indicate that SEZ improvement levels differ between individual zones. Standard deviations from infrastructure development records show that several SEZ zones perform better than others when examining rapid improvement levels. Many variables show negative skew distributions that demonstrate positive perceptions about SEZs despite the existence of numerous homes that do not feel they obtain sufficient benefits. The gap between different areas becomes particularly noticeable regarding skill development as well as infrastructure improvements which seem to be more restricted in specific regions. The improvement of household economic conditions through SEZ development will become more effective by filling identified gaps. The positive livelihood benefits from SEZs require specific interventions to achieve balanced distribution especially for infrastructure improvements and skill development and social service provision.

***Acknowledgment*:** None

***Author's Contribution Statement*:** Natasha Murtaza: Conceptualization, Analysis, Editing, Writing - original draft. M. Khalid Bashir: Supervision, Review, Editing, and Visualization. Asghar Ali: Quality and Validation. Abdul Ghafoor: Review and Editing.

***Data availability statement*:** Data will be made available on request.

***Conflicts of interest*:** The authors declare no conflict of interest. Declaration of generative AI and AI-assisted technologies in the writing process. During the preparation of this work the author (s) only used Chat GPT to improve sentence writing. After using this tool/service, the author(s) reviewed and edited the content as needed and take (s) full responsibility for the content of the publication.

***Funding*:** PSF (Pakistan) and NSFC (China)

***Informed consent*:** Written informed consent was obtained from all participants regarding publishing their data and photographs

***SDGs addressed*:** No Poverty, Decent Work, and Economic Growth and well-being.

***Policy referred*:** Infrastructure development (transport, energy, industrial zones); Skill development and employment generation; Women empowerment and household livelihood improvement; Government regulations and support mechanisms linked to SEZ functionin

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